Ag Insights

From the Desks of Your Northwest Area Ag Specialists

Oklahoma Cooperative Extension Service - Division of Agricultural Sciences and Natural Resources - Oklahoma State University

July, 2018

West Area Office, Enid

Phone: (580)-237-7677

Dana Zook

Area Livestock Specialist
dana.zook@okstate.edu

Trent Milacek

Area Ag Economics Specialist
trent.milacek@okstate.edu

Josh Bushong

Area Agronomy Specialist
josh.bushong@okstate.edu

OPREC, Goodwell

Phone: (580)-349-5441

R. Britt Hicks

Area Livestock Specialist
britt.hicks@okstate.edu

Facebook Page:
facebook.com/nwareaosuextension

Website:
http://oces.okstate.edu/nwareaextension

Examining Sharecrop Rental Arrangements in Summer Crop Production Systems

Trent T. Milacek, NW Area Ag Econ Specialist

Sharecrop rental arrangements have been popular on Oklahoma wheat acres for a long time. A landowner will lease farmland to a producer with the stipulation that they will receive a portion of the production off that land as “rent”. The landowner may be required to pay for a portion of the expenses as well. A traditional example for wheat production would be a landowner receiving 1/3 of the wheat production while contributing to 1/3 of the fertilizer and chemicals applied to the crop.

This arrangement works out well because wheat production is relatively low-cost compared to row crops. Seed and chemicals are not as expensive or intensive as row crop production. Therefore, it is not simple enough to carry this arrangement over verbatim to a sharecrop lease for row crops.

It may be simple to rationalize that the rent paid for the property is the value of 1/3 of the production. However, that is simply revenue not received by the producer. The cash paid to produce 1/3 of the crop for the landowner, by the producer, is the rent.

It is important for producers to understand what their cash outlay for rent is in these arrangements. The cost of the lease is the cash outlay the producer pays for the landowner. Chemical burndown or tillage operations, seed, harvesting and planting all figure into this cost. The following example will attempt to compare several common crops using the 1/3 sharecrop example. This will also assume that the landowner is paying for 1/3 of the fertilizer and chemicals applied directly to the crop during the growing season. It is important to understand that these examples need to be tailored to unique production systems and that they are provided here for illustration purposes only.

Wheat is the typical crop planted in this arrangement so the example will start there. In a grain-only production system for north-central Oklahoma, a producer can expect to pay roughly $145/acre in operating costs. Removing 1/3 of the fertilizer and chemical costs that are paid by the landowner brings the total to $125/acre. This means that a producer is paying $41/acre in expenses for the landowner. The 5-year average wheat production from 2012-2016 for the state of Oklahoma is 29.8 bu./acre. The average Marketing Year Average price for that timespan is $5.80/bu. In summary, the average revenue for a wheat crop in Oklahoma from 2012-2016 is $173/acre. A landowner would receive 1/3 of that production totaling $57/acre with $20/acre in

(Continued on page 2)

(Continued from page 1)

expenses. Their net revenue from that land equals $37/acre.

Soybeans will be a popular crop in the state this year. Applying the same example will determine if the arrangement is equitable across crops. A full-season soybean production system for north-central Oklahoma will cost a producer roughly $200/acre in operating costs. Removing 1/3 of the fertilizer and chemical costs paid by the landowner brings the total to $180/acre. The producer's cost to produce 1/3 of the crop for the landowner is $59/acre. The 5-year average soybean yield from 2012-2016 for the state of Oklahoma is 27 bu./acre. The average Marketing Year Average price for that time-period is $11.08/bu. To summarize, the average revenue from a soybean crop in Oklahoma from 2012-2016 is $299/acre. A landowner would receive 1/3 of that production totaling $99/acre with $20/acre in expenses. Their net revenue from the land equals $79/acre.

It appears that the previous examples are not equitable. In each case, the landowner is paying roughly $20/acre for their expenses and receiving 1/3 of the production. The net revenue from soybeans after expenses outpaces wheat by $42/acre, which is a percent change increase of 114%. On the other side, the farmer is paying $41/acre for the landowner in wheat production and $59/acre in soybeans. This is a percent change increase of 44% while the landowners increase was 0%. For the arrangement to be equitable, the landowner's share of expenses should have increased by a percent change equal to that of the farmer. This means the landowner should be paying approximately $28.00 on soybean sharecrop acres.

This example proposes that the traditional 1/3 sharecrop arrangement with the landowner paying for 1/3 of fertilizer and chemicals applied to the crop may not be equitable comparing wheat and soybeans. In the previous example, the landowner's share of production expenses should increase by a percent change equal to that of the farmer.

In a soybean production system, if the landowner continues to receive 1/3 of the production they would need to increase their contribution for fertilizer and chemicals applied to the crop to approximately 1/2.

These examples are provided for reference only and the outcomes are influenced greatly by the cost of the production system. If you would like assistance comparing sharecrop arrangements for your farm, please contact your local county extension agent.

Silage Production: Not Just an Afterthought

Dana Zook, Enid Area Livestock Specialist

The hot summer days have returned, wheat harvest is wrapping up, and producers are putting "feed" in the ground. Some of these producers may plan to put "feed" up for hay but other producers intend to make silage.

In some areas of the state, beef producers are once again producing silage for use in cow/calf or growing segments of the industry. When harvested and put up properly, silage has the ability to complement any segment of the beef industry. However, silage should not be an afterthought. Production of good silage takes intentional management and attention to detail. Bad silage costs money and can reduce cattle performance.

Silage is defined as a product formed when forage with adequate moisture content is stored anaerobically (without oxygen). Forage becomes silage through a fermentation process that reduces the acidity level below the critical control level of pH 5. Good silage will hover around an acidity level of pH 4. One microorganism that is crucial in the silage making process is lactic acid bacteria. These bacteria help maintain silage stability and ensure nutrient quality is preserved. On the other hand, silage is constantly at risk of being spoiled by aerobic microorganisms (organisms that require oxygen). These aerobic microorganisms or "bad bugs" in the silage making process include yeasts, mold, enterobacteria, clostridia and some bacilli bacteria.

Good silage starts with high quality forage. Forage chopped for the silage pile should average at 60-65% moisture. Chopping lengths will vary depending of forage variety; Corn, sorghum and sorghum sudan hybrids may range in chop length of ¼ to 3/8 inches and small grains will range from 3/8 to ½ inches. Why is chop length so important? Length of chop is important because it can affect packing quality of silage and silage consumption when feeding.

Packing is one of the most important aspects of a good silage pile and is crucial to oxygen removal from the silage mass. A properly packed pile will be key to maintain silage stability during storage and preserve quality to the silage face when the pit or pile is opened. Producers should also consider an inoculant to assist with fermentation and nutrient stability.

Don't forget harvest efficiency! Filling the silo quickly reduces the time exposed to air and reduces respiration and losses to oxygen exposure. Covering and properly sealing the pile is an important next step. Some may seal with multiple layers to help ensure stability. Uncovered piles will result in significant spoilage and poor fermentation due to oxygen exposure and growth of "bad bugs".

Shrink or loss is always a concern in silage production. In the front end of the process, losses are greatest from slow filling, coarse chop, and forages that are too dry. On the back end, poor maintenance of the pile, slow feeding, and pulling too much from the pile face increase loss to the overall product. Realistically there will be some loss in silage production, however, it is the goal for the most efficient operators to minimize loss to 5 to 10%.

Production of quality silage only starts with a quality forage. Follow the guidelines of good management to ensure proper fermentation and you will be on the road to a quality silage feed source. For more information about silage production, contact your local county Extension Ag Educator.

Preventive Controls for Animal Food

August 28-30

The Food Safety Modernization Act (FSMA) requires facilities processing any type of animal food (complete feed or ingredients) to comply with new current good manufacturing practices and to implement a written animal food safety plan developed and overseen by a "Preventive Controls Qualified Individual (PCQI)."

This course is intended for individuals needing PCQI designation to create FSMA Hazard Analysis Risk-Based Preventive Control plans for their animal food facilities. A certificate of completion will be given by the Food Safety Preventive Controls Alliance.

Topics:

- Regulatory Overview and Introduction to the Rule
- Current Good Manufacturing Practice
- Animal Food Safety Hazards
- Overview of the Food Safety Plan
- Hazard Analysis and Preventive Controls Determination
- Required Preventive Control Management Components
- Process Preventive Controls
- Sanitation Preventive Controls
- Supply-Chain-Applied Controls
- Recall Plan

Location:

120 FAPC-OSU, Stillwater, OK

Cost:

$800/person - large companies (greater than 10 employees)
$700/person - small companies (10 employees or less)

A $25 fee will be billed to those who fail to cancel or attend. The registration fees cover lunch, refreshments and workshop material costs.

Register:

Online - http://fapc.biz/workshops/preventive-controls-for-animal-food
Call - 405-744-6277

Visa, MasterCard, Cash or Checks Accepted

Robert M. Kerr
Food & Agricultural Products Center

Effect of Milk Production in Beef Cows on Post-Weaning Performance of Their Progeny

Britt Hicks, Ph.D., Area Extension Livestock Specialist

A major focus in the beef industry has been to maximize profit by using trait selection through the use of expected progeny differences (EPD). Milk production EPDs in most breeds (including Hereford and Angus) has consistently increased since the 1990s while a few breeds' genetic trend is negative or static. Breeds with a negative or static genetic trend including Gelbvieh and Simmental had a relatively high capacity for milk yield when they entered the US beef industry. Selection for increased milk production should result in increased weaning weights. However, this also results in an increase in cow maintenance energy requirements, increasing the cost of feed to maintain cows with greater milk production. Although milk selection traits may increase production by increasing calf weaning weight, the additional cost to maintain production goals with increased milk production may decrease profitability.

University of Tennessee researchers evaluated the effects of actual milk yield in mature beefs cows on reproductive performance and calf performance in the Southeastern US in a high feed resource available environment. In this study, 24-hour milk production in spring-calving Angus and Angus crossbred cows was measured with a modified weigh-suckle-weigh technique using a milking machine on approximately days 58 and 129 after calving. The milk yield data was used to retrospectively classify cows on actual milk yield as Low (14.5 lb/day), Mod (19.9 lb/day), or High (26.4 lb/day).

These researchers reported that timed-AI pregnancy rate were the lowest in the High (44%) milk producing cows with no difference between Low (57%) and Mod (55%) milk cows. In addition, overall pregnancy rate continued to be the lowest in High (75%) milk producing cows with the greatest pregnancy rate in Mod (86%) milk cows (Low cows were intermediate at 81%). Calf weaning weights and 205 day adjusted weights were not different among calves from different milk treatment groups.

Based on the results of this study, these researchers concluded "that even in management systems that modify the grazing environments with harvested feedstuffs, high milk production decreases reproductive efficiency without increasing calf BW at weaning". Furthermore, they recommended that "producers may need to discount high milk producing cows and take into account the requirements for maintaining a greater amount of milk, and the negative influences associated with a greater milk yield".

In an additional part of this research project, weaned Angus steers and heifers were used to determine the influence of dam's milking potential on progeny performance and feed efficiency after weaning. At weaning each year, calf body weight (BW) was measured prior to entry into a GrowSafe Feeding System (electronic feed monitoring system that measures individual intakes) and again 10 days after to account for the acclimation period to the feeding system. The BW after the acclimation period was considered the initial entry BW. After the acclimation period, BW were recorded at a midpoint (~35 days post-acclimation) and at the termination of a backgrounding trial (~75 days post-acclimation). During both the acclimation and study period, steers and heifers were fed a corn silage-based growing ration and individual dry matter intake (DMI) was recorded daily. Average daily gain (ADG) and average DMI for each time point were utilized to calculate a feed conversion ratio (feed:gain) for individual animals.

These authors reported that calves from Moderate and High milking cows had similar initial BW (700 lb) with progeny from Low milking cows having the lightest BW (655 lb). Moderate and High calves maintained greater BW until the end of the 75 day backgrounding phase. Even though calves from Low milking cows had the lightest BW during the study, BW gain and average daily gain were not different among groups over the total trial. Overall DMI was 10.7% greater in calves from High milking dams (27.36 lb) with no differences between calves from Low (24.30 lb) and Moderate cows (25.14 lb). As a result, feed conversion ratios were 16.9% lower (more efficient) in calves from Low and Moderate milking dams compared to calves from High milking dams.

These researchers concluded that results from this study suggest that selecting for maternal traits of high milk production for increased calf growth results in decreased post-weaning feed efficiency. The data suggest that offspring from low milking beef cows

(Continued on page 6)

(Continued from Page 5)

have an increased post-weaning feed efficiency. They also noted that combining the cow performance results from their first study and this study, suggest that “discounting the selection for milk production increases cow herd efficiency through the backgrounding phase”. Thus, high milk producing cows have lower reproductive efficiency and produce offspring that convert feed to gain less efficiently than lower milk producing cows.

Native Grass Haying

Josh Bushong, NW Area Extension Agronomy Specialist

Early July is the optimum time of year to be haying native grass pastures for hay. There are some basic production practices to maximize production potential of these hay meadows. Since native hay meadows are a long-term investment, they should be managed in such a way to sustain long-term productivity.

The predominant grasses in native hay meadows include big bluestem, eastern gammagrass, indiangrass, and little bluestem. There are many other native grasses, forbs, and legumes that can also contribute to the hay meadow productivity and diversity. Examples of undesirable plants include annual threeawn, Broomsedge bluestem, Purple top, thick-spiked tridens, and tall dropseed.

The most important management practice is cutting date. In most years the optimum cutting date will be between July 1 and 10. Harvesting native hay at this time will achieve a good balance of forage yield and forage quality and will allow the native stand to recover the rest of the year to sustain production for following years.

The main key to managing any perennial hay field is to maintain a balance between forage yield and forage quality. Time of cutting will be the primary production practice that will determine the forage yield and quality. The maximum forage yield and maximum forage quality hardly ever occur at the same time. Hay tonnage will typically peak in late August, while crude protein and digestibility are usually highest in May.

The second most important management practice is proper cutting height. Cutting height can easily be overlooked, but can be highly detrimental to a native grassland if producers get a little to greedy and cut too low in order to try to get a little more tonnage. Native grasslands should never be cut below 4 inches. The reason cutting height is important is that native grasses elevate their growing points during this time period. If the growing point is cut off, then production will be greatly reduced for next year’s growing season.

Cutting height is also important because most of the native grass species need time to re-grow to build root carbohydrate reserves. To sustain a native hay meadow it is recommended to only harvest it for hay once a year. Native grass species grow rapidly through May and June, but will exhibit slow re-growth in July after harvesting a hay crop. In addition to the slow growth, the re-growth is often less palatable as well. Native species have adapted through natural selection for these traits to ensure grazing animals will not exhaust the root carbohydrates prior to winter dormancy.

A vast majority of research conducted by Oklahoma State University has shown that forage tonnage can be increased with an application of fertilizer, however it is rarely economical to do so. When adequate moisture is available during spring and early summer, 30-80 pounds of actual nitrogen fertilizer can increase hay yield and crude protein. Herbicide applications are rarely warranted on native grasslands. If managed properly, there should be a mix of native forbs and legumes that benefit the grass production.

Good management practices include harvesting prior to mid-July, leave at least 4 inches of stubble, harvest only once during the growing season, and manage the re-grown forage in the dormant season with either fire of grazing.

(Continued on page 7)

For more information about harvesting native grasslands for hay, contact your local Oklahoma State University Cooperative County Extension Office. Information that is more specific can be found from the OSU factsheet “NREM-2891 Native Hay Meadow Management”.